

**Table 3 TIRE INFLATION PRESSURE  
AND CIRCUMFERENCE MEASUREMENTS (4-WHEEL MODELS)**

Model	Tire size	Tire pressure		Circumference	
		kg/cm <sup>2</sup>	psi	mm	in.
Fourtrax 70 Front and rear	16×8.00-7	0.15	2.2	1,285	50.6
TRX125 and Fourtrax 125	20×7.0-8	0.2	2.9	1,585	62.4
	22×11.0-8	0.15	2.2	1,742	68.2

**Table 4 FRONT SUSPENSION TOE-IN DIMENSION**

Fourtrax 70	0 ± 7.5 mm (0 ± 0.30 in.)
TRX125 and Fourtrax	5 ± 10 mm (0.2 ± 0.4 in.)

**Table 5 TUNE-UP SPECIFICATIONS**

Valve clearance (intake and exhaust)	
Fourtrax 70	0.05 mm (0.002 in.)
TRX125 and Fourtrax 125	0.07 mm (0.003 in.)
Compression pressure (at sea level)	
Fourtrax 70	10.5-13.5 kg/cm <sup>2</sup> (149-191 psi)
TRX125 and Fourtrax 125	11.0-14.0 kg/cm <sup>2</sup> (156.5-199 psi)
Spark plug type	
Fourtrax 70	NGK CR7HS, ND U22FSR-L
TRX125 and Fourtrax 125	NGK DR8ES-L, ND X24ESR-U
Spark plug gap	0.6-0.7 mm (0.024-0.028 in.)
Ignition timing at idle	Timing mark "F"
Idle speed	1,700 ± 100 rpm

## CHAPTER FOUR

### ENGINE

#### ENGINE

##### **Removal/Installation (1987 Fourtrax 70)**

The engine removal and installation procedures are the same as on previous years with the exception of the added rear brake pedal assembly.

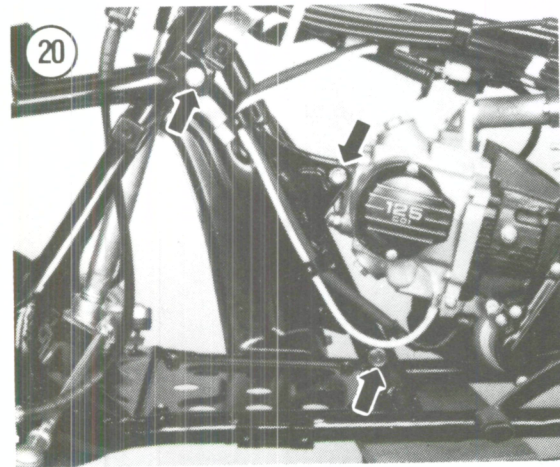
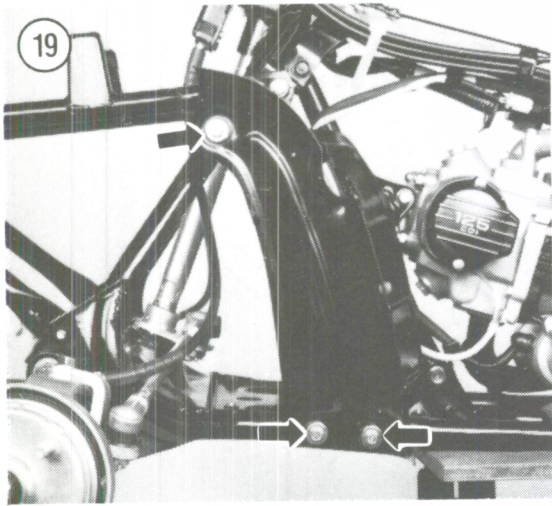
Remove the rear brake pedal assembly as described in this supplement.

##### **Removal/Installation (All Other 4-Wheel Models)**

The engine removal and installation procedures are the same as on late model ATC70s and ATC125Ms as described in Chapter Four in the

main body of this book with the following exceptions:

1. Remove the front fender and fuel tank as described in this supplement.
2. Remove the seat/rear fender as described in this supplement.
3. On TRX125 and Fourtrax 125 models, perform the following:
  - a. Remove the bolts (**Figure 19**) securing the inner fenders and remove both inner fenders.
  - b. Remove the bolts (**Figure 20**) securing the engine mounting front pipe and remove the front pipe.
4. During installation, tighten the engine mounting bolts to the torque specifications listed in **Table 6**.



### CYLINDER HEAD AND CAMSHAFT

#### Removal (1985 ATC110 and 1985 ATC125)

Damage to the valves and cylinder head can be caused by overrevving of the engine on 1985 ATC110 and 1985 ATC125M models. In order to eliminate this problem, Honda has developed a new CDI unit with a built-in rpm limiter. If your ATC is still covered by the factory warranty, take it to the Honda dealer and have this modification performed under the conditions of your warranty. If your ATC is out of the warranty period, this modification should still be performed to eliminate the possibility of engine damage.

All models that have new parts installed are identified by an "X" mark stamped directly under the engine serial number on the crankcase.

The models that are affected by this problem are as follows:

- a. 1985 ATC110: Frame serial No. 600001-627729.
- b. 1985 ATC125M: Frame serial No. 100001-138210.

#### Installation

##### (1985 ATC110 and 1985 ATC125)

In order to gain the maximum amount of cam chain slack when installing the cylinder head, remove the cam chain tensioner bolt, spring and pushrod as described in this supplement. After the cylinder head is installed, install the cam chain tensioner parts that were removed as described in this supplement.

#### Installation

##### (Fourtrax 70)

Cylinder head and camshaft installation is the same as on ATC70 models except for the location of the timing mark on the alternator rotor. Remove the timing inspection cap on the left-hand crankcase cover to see the timing mark (Figure 18).

#### Installation

##### (TRX125 and Fourtrax 125)

Cylinder head and camshaft installation is the same as on ATC125M models except for the torque specification for the cylinder head cover nuts. Tighten the nuts to 20-22 N·m (14-16 ft.-lb.).

### CAMSHAFT CHAIN AND TENSIONER

#### Removal/Installation (70 cc Engines)

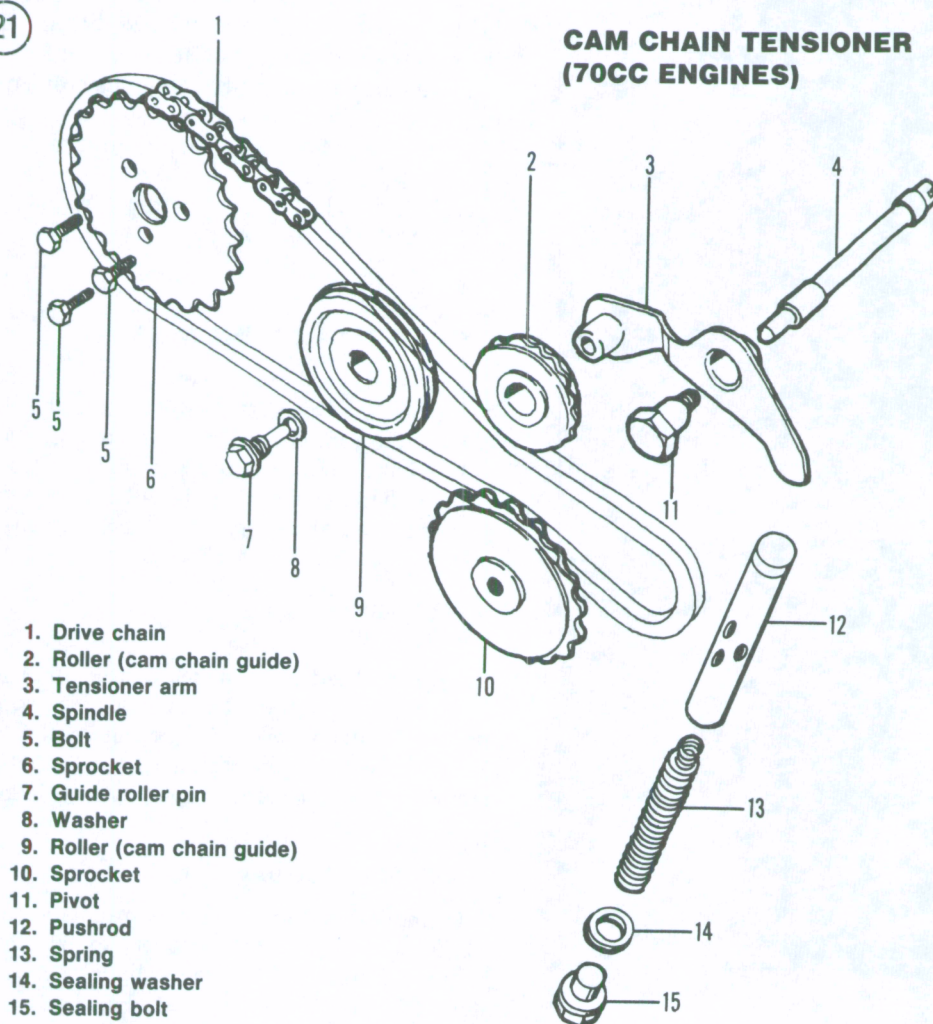
This procedure is shown with the engine removed from the frame for clarity. All components can be removed with the engine in the frame.

Refer to **Figure 21** for this procedure.

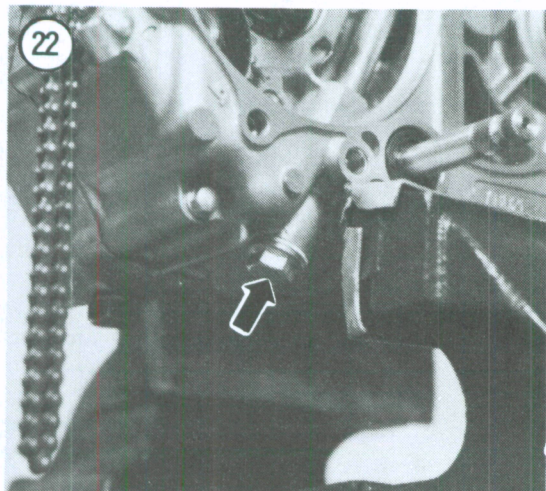
1. Remove the cylinder head and cylinder as described in Chapter Four in the main body of this book.
2. Remove the alternator rotor and stator assembly as described in Chapter Seven in the main body of this book.

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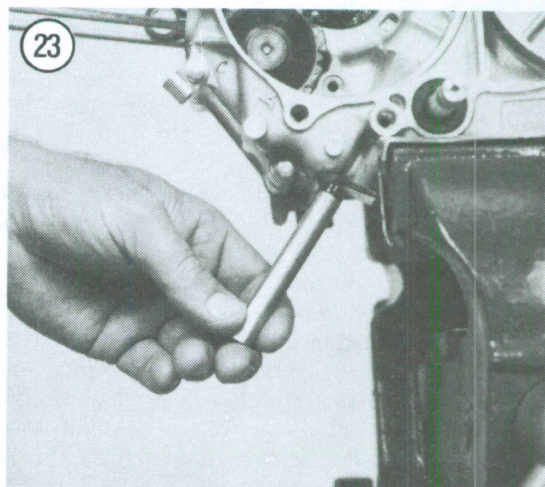
# CAM CHAIN TENSIONER (70CC ENGINES)

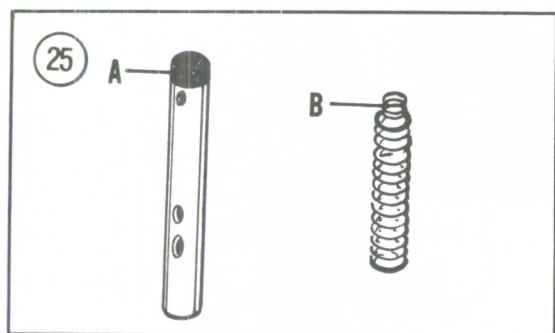
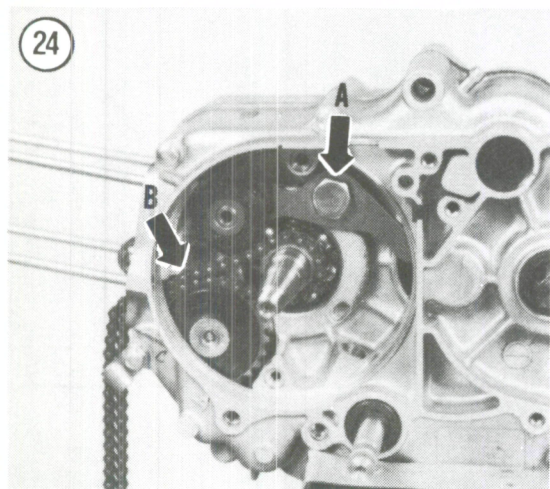


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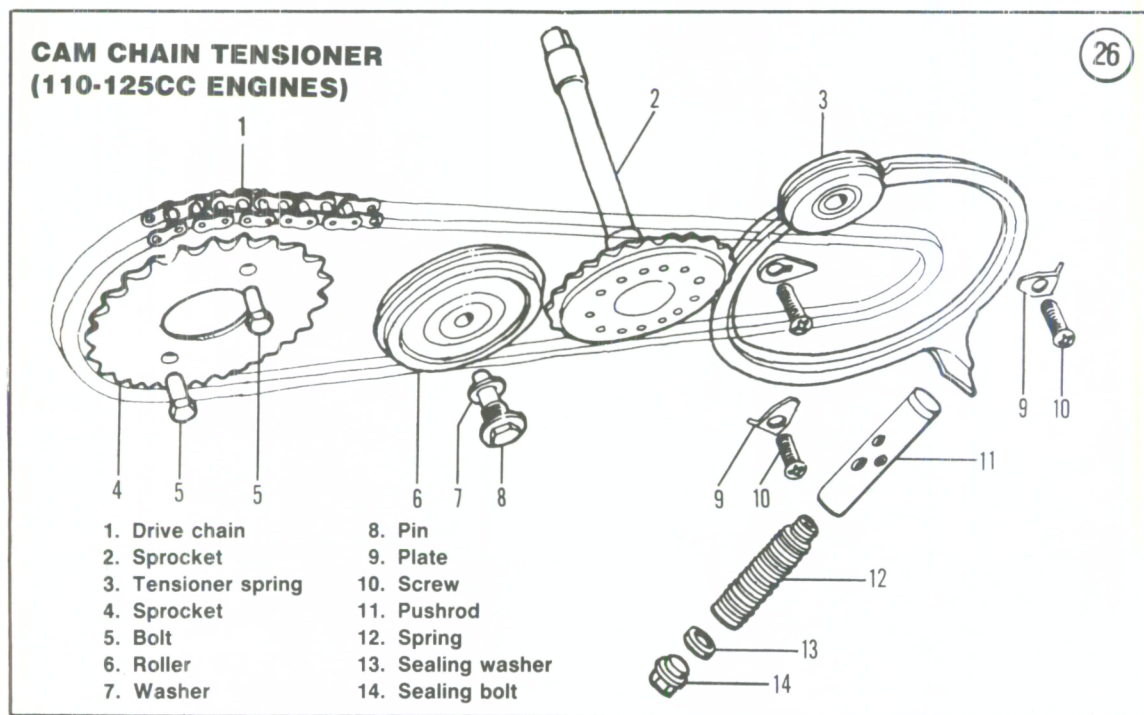


3. Unscrew the sealing bolt and washer (Figure 22).
4. Remove the spring and pushrod (Figure 23).
5. Remove the bolt (A, Figure 24) securing the tensioner arm and remove the tensioner arm and roller.
6. Remove the cam chain (B, Figure 24).
7. Inspect all components as described in this supplement.
8. Install by reversing these removal steps, noting the following.
9. Apply fresh engine oil to all components prior to installation.
10. Position the pushrod with the head end (A, Figure 25) going into the crankcase first.
11. Position the spring so the tapered end (B, Figure 25) fits into the recess in the end of the pushrod.
12. Install the sealing bolt and washer and tighten to 20-25 N•m (15-18 ft.-lb.).

#### Removal/Installation (110-125 cc Engines)

This procedure is shown with the engine removed from the frame for clarity. All components can be removed with the engine in the frame.

Refer to Figure 26 for this procedure.



1. Remove the cylinder head and cylinder as described in Chapter Four in the main body of this book.
2. Remove the alternator rotor and stator assembly as described in Chapter Seven in the main body of this book.
3. Unscrew the sealing bolt and washer (A, **Figure 27**).
4. Remove the left-hand crankcase cover as described for your specific model in Chapter Four in the main body of this book.
5. Remove the spring and pushrod (**Figure 28**).
6. Remove the chain guide sprocket (**Figure 29**).
7. Remove the cam chain (A, **Figure 30**).
8. Remove the screw securing the set plates (B, **Figure 30**) and remove the tensioner assembly (C, **Figure 30**).
9. Inspect all components as described in this supplement.
10. Install by reversing these removal steps, noting the following.
11. Apply fresh engine oil to all components prior to installation.
12. Slightly rotate the chain guide sprocket so the notch in the shaft will mesh with the raised tab on the oil pump rotor shaft (located within the crankcase on the opposite side of the engine).
13. Position the pushrod with the head end (A, **Figure 25**) going into the crankcase first.
14. Position the spring so the tapered end (B, **Figure 25**) fits into the recess in the end of the pushrod.
15. Install the sealing bolt and washer and tighten to the following torque specifications:
  - a. ATC110: 30-40 N•m (22-29 ft.-lb.)
  - b. ATC125: 20-25 N•m (15-18 ft.-lb.)
16. Remove the oil bolt (B, **Figure 27**) and sealing washer. Using a "pumper type" oil can, fill the cavity with clean engine oil until the oil starts to run out of the hole.

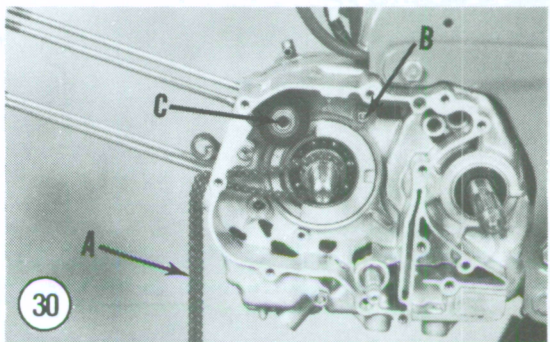
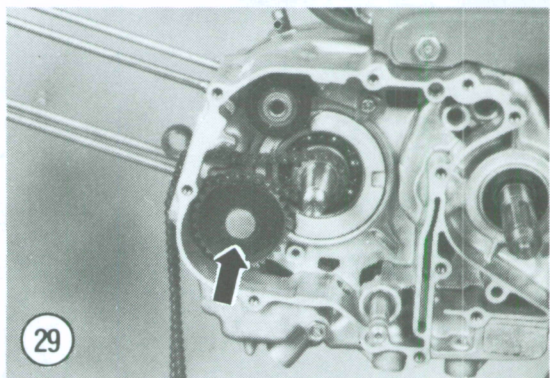
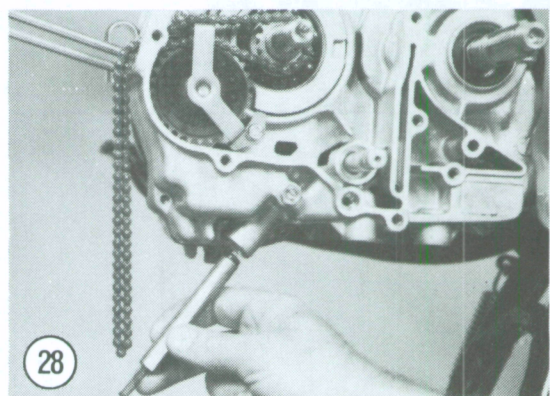
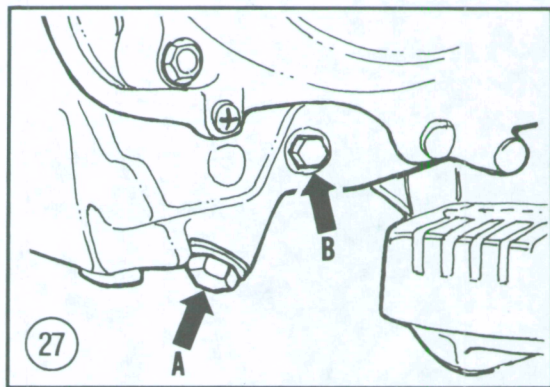
#### CAUTION

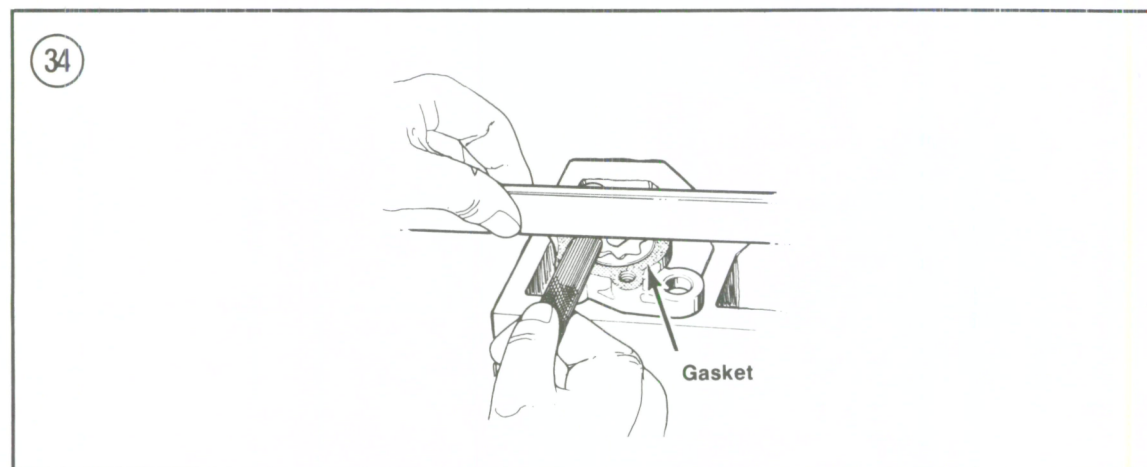
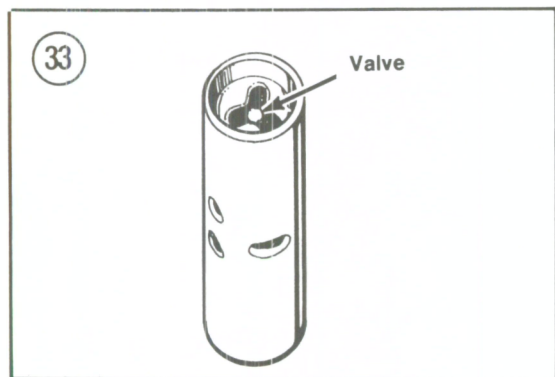
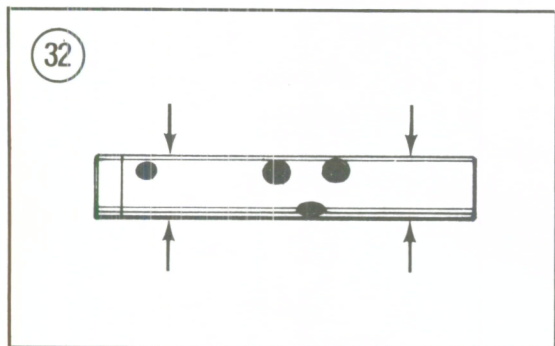
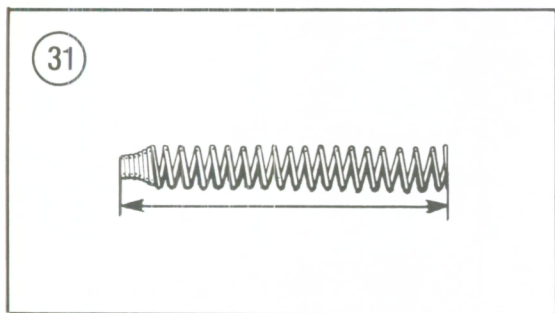
*Do not install a bolt longer than 6 mm as a longer bolt would interfere with the action of the pushrod.*

17. Install the oil bolt and sealing washer and tighten securely.

#### Inspection

1. Clean all parts in solvent and thoroughly dry with compressed air.
2. Inspect the roller, tensioner assembly and the chain guide sprocket.
3. If any of the components are worn or any rubber-coated parts are starting to disintegrate,





they must be replaced. If the cam chain is replaced it is a good idea to replace the sprocket at the same time and vice versa.

4. Measure the length of the spring (**Figure 31**). If it has sagged to 77 mm (3.0 in.) or less it must be replaced.

5. Measure the outside diameter of the pushrod (**Figure 32**). If it is worn to 11.90 mm (0.469 in.) or less it must be replaced.

6. Check the operation of the valve (**Figure 33**) in the end of the pushrod. If the valve does not move freely, replace the pushrod.

7. Inspect the pushrod for cracks or other damage. Replace if necessary.

### OIL PUMP

All service procedures for the oil pump on all models are the same as on previous models except for one additional inspection procedure.

#### Inspection (70-110 cc Engines)

1. Install the gasket onto the oil pump body.  
2. Inspect the rotor side clearance with a straightedge and a flat feeler gauge (**Figure 34**). The side clearance service limit between the rotors and the body is as follows:

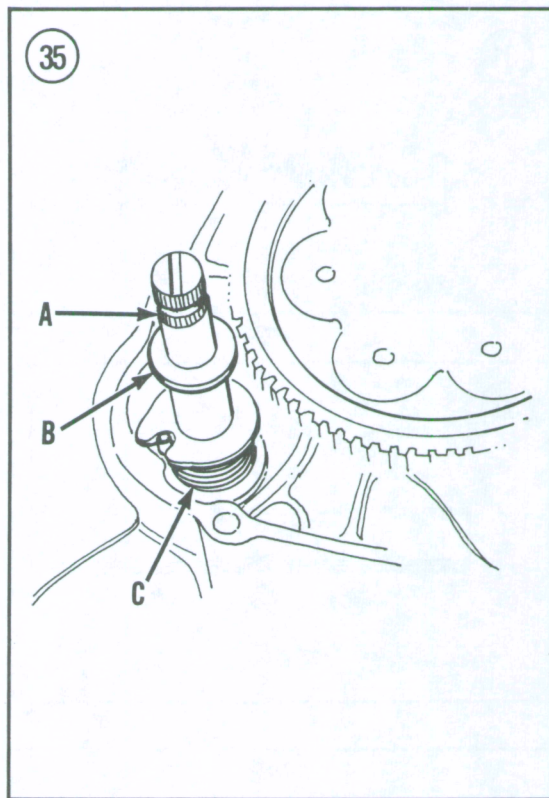
- a. 70 cc engine: 0.12 mm (0.005 in.)
- b. 110 cc engine: 0.15 mm (0.006 in.)

If the clearance is this dimension or greater replace the worn parts.

### RIGHT-HAND CRANKCASE COVER (1987 FOURTRAX 70)

#### Removal/Installation

1. Drain the engine oil as described in Chapter Three in the main body of this book.
2. Remove the rear brake pedal and brake cable guard as described in this supplement.
3. Remove the exhaust pipe as described in this supplement.
4. Remove the bolts securing the step guard and remove the step guard.
5. Remove the bolts securing the foot peg assembly and remove the foot peg assembly.
6. Remove the bolts securing the right-hand crankcase cover and remove the cover and gasket. Don't lose the locating dowels.
7. Install by reversing these removal steps, noting the following.
8. Install a new gasket and make sure the locating dowels are in place.
9. Fill the crankcase with the recommended type and quantity of engine oil as described in Chapter Three in the main body of this book.

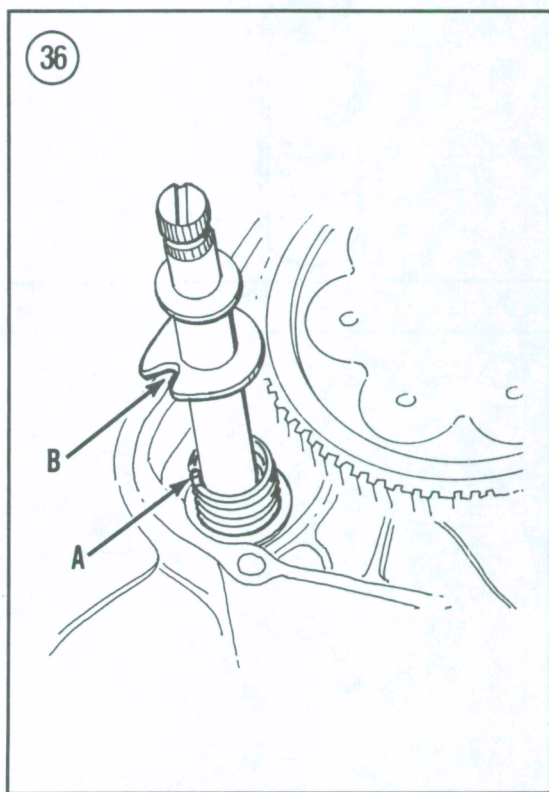


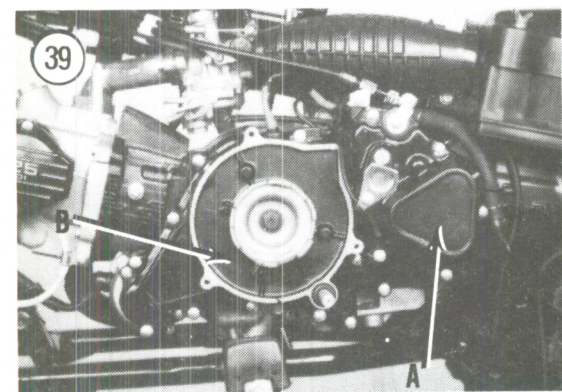
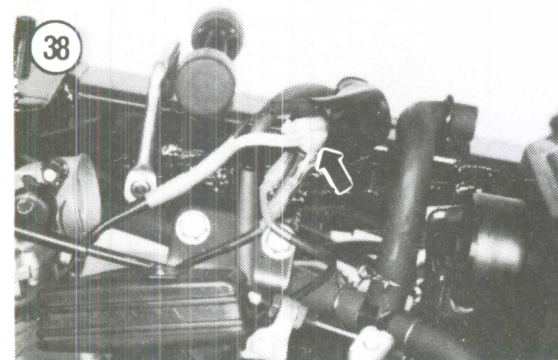
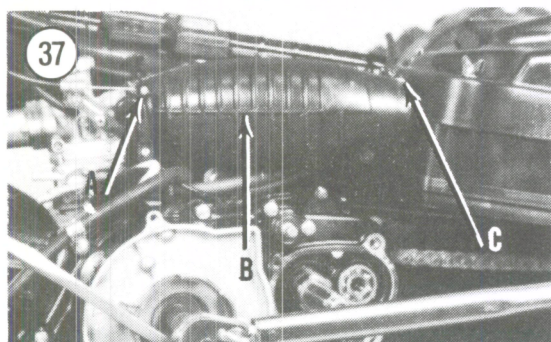
### REAR BRAKE PEDAL PIVOT SHAFT (1987 FOURTRAX 70)

#### Removal/Installation

The rear brake pedal pivot shaft is integrated into the crankcase.

1. Remove the right-hand crankcase cover as described in this section of the supplement.
2. Withdraw the brake pedal pivot shaft (A, Figure 35), washer (B) and spring (C) from the left-hand crankcase half.
3. Inspect the pivot shaft for wear, damage or bending. Replace if necessary.
4. Install the spring into the crankcase with the raised end point up.
5. Install the pivot shaft and align the raised end of the spring (A, Figure 36) with the notch (B, Figure 36) in the pivot shaft plate. Push the pivot shaft in until it bottoms out.
6. Make sure the washer (B, Figure 35) is in place on the pivot shaft.
7. Install the right-hand crankcase cover as described in this section of the supplement.





**LEFT-HAND CRANKCASE COVER  
(TRX125 AND FOURTRAX 125)**

#### Removal/Installation

1. Drain the engine oil as described in Chapter Three in the main body of this book.
2. Remove the recoil starter as described in this supplement.
3. Remove the alternator as described in Chapter Seven in the main body of this book.

4. Loosen the clamping screws on the air cleaner connecting tube bands (A, **Figure 37**) and remove the connecting tube (B, **Figure 37**).

5. Disconnect the electrical connector (**Figure 38**) on the alternator stator assembly and the reverse switch wire from the wiring harness.

6. Remove the sub-transmission (A, **Figure 39**) as described in this supplement.

7. Remove the bolts securing the left-hand crankcase cover (B, **Figure 39**) and remove the cover and gasket. Don't lose the locating dowels.

8. Install by reversing these removal steps, noting the following.

9. Install a new gasket and reinstall the locating dowels.

10. Make sure the oil seals in the crankcase cover for the starter driven pulley (part of the recoil starter and alternator rotor) and the shift shaft are in place.

### CRANKCASE AND CRANKSHAFT

#### Crankcase Disassembly/Assembly (TRX125 and Fourtrax 125)

The crankcase disassembly and assembly procedure is the same as on previous 90-125 cc engines except that there is no longer a neutral indicator shaft to remove or install.

### RECOIL STARTER

#### (Fourtrax 70)

#### Removal/Installation

1. Place the ATV on level ground and set the parking brake.
2. Remove the bolts securing the recoil starter assembly and remove the assembly and gasket.
3. Install by reversing these removal steps. Make sure to install a new gasket on the assembly prior to installation.

#### Disassembly and Starter Rope Removal

#### NOTE

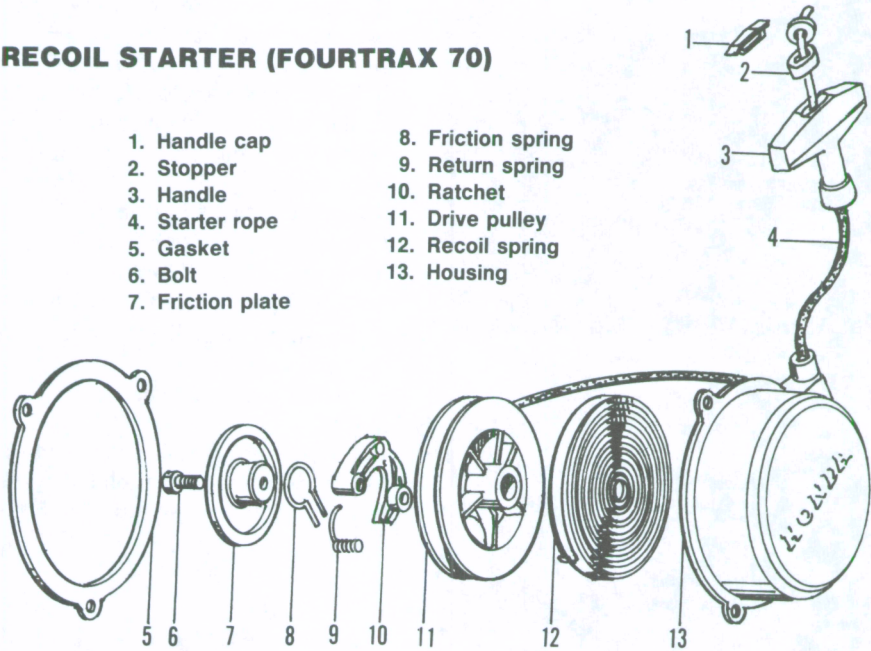
*If you have been stranded with a broken starter rope, consider replacing the Honda starter rope with an aftermarket vinyl coated flexible wire cable. These cables are available from many dealers and mail order houses and will outlast the rope.*

Refer to **Figure 40** for this procedure

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**RECOIL STARTER (FOURTRAX 70)**

- |                   |                    |
|-------------------|--------------------|
| 1. Handle cap     | 8. Friction spring |
| 2. Stopper        | 9. Return spring   |
| 3. Handle         | 10. Ratchet        |
| 4. Starter rope   | 11. Drive pulley   |
| 5. Gasket         | 12. Recoil spring  |
| 6. Bolt           | 13. Housing        |
| 7. Friction plate |                    |

**WARNING**

*The return spring is under pressure and may jump out during the disassembly procedure. It is a very strong spring and may cut fingers or cause eye injury. Wear safety glasses and gloves during the disassembly and assembly procedure.*

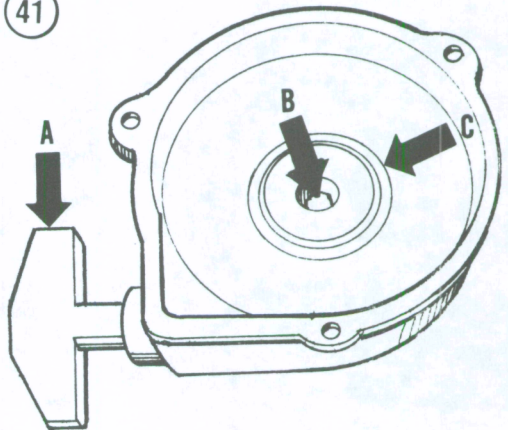
1. Remove the cover from the starter handle and untie the knot in the starter rope or cut the rope if it is going to be replaced.
2. Hold the starter rope with Vise Grips and remove the starter handle (A, **Figure 41**) from the rope.
3. Remove and discard the gasket.
4. Remove the bolt (B, **Figure 41**) and friction plate (C, **Figure 41**).
5. Remove the friction spring, return spring and the ratchet from the drive pulley.
6. Hold onto the starter rope and remove the Vise Grips. Release the starter rope slowly into the housing.

**WARNING**

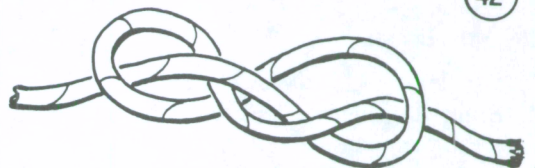
*The recoil spring may jump out at this time—**protect yourself accordingly.***

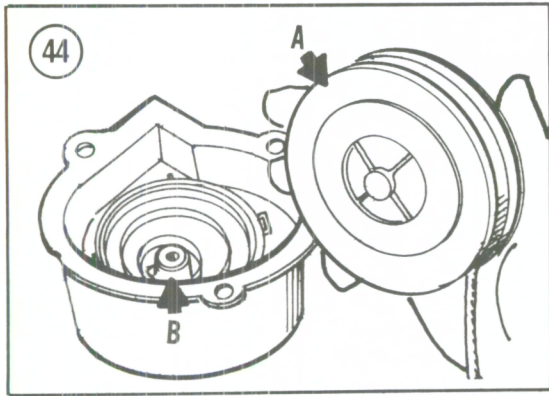
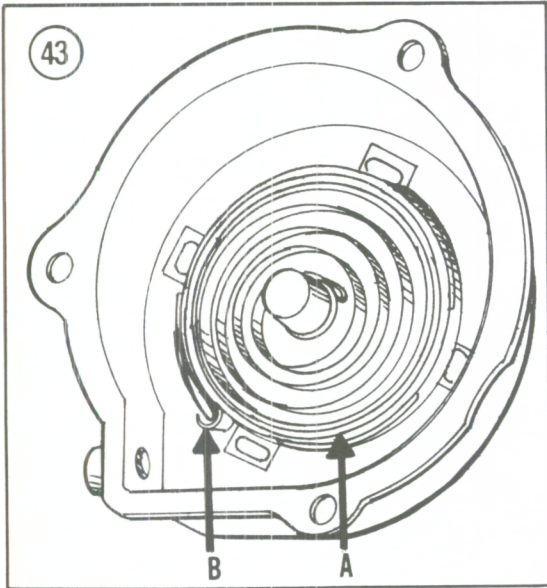
7. Remove the drive pulley and the recoil spring.
8. Untie and remove the starter rope from the drive pulley.

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**NOTE**

*It is a good idea to replace the starter rope every time the recoil starter is disassembled.*

9. Clean all parts in solvent and thoroughly dry.
10. Inspect all moving parts for wear or damage and replace as necessary.
11. Check the recoil spring and housing for wear or damage. Replace as necessary.

### Assembly and Starter Rope Installation

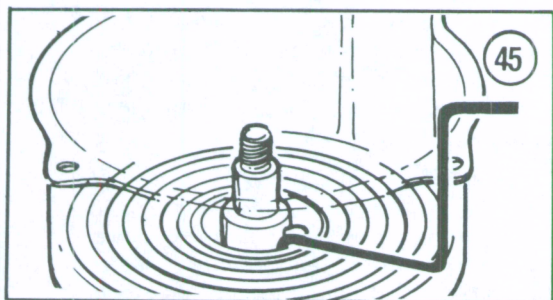
1. Install a new starter rope in the drive pulley. If a stock Honda nylon rope is used, tie a special knot at the end (Figure 42). Apply heat to the knot (a match is sufficient) and *slightly* melt the nylon rope. This will hold the knot securely.
2. Apply multipurpose grease to the housing shaft where the drive pulley rides.

3. As viewed from the ratchet side, coil the rope onto the drive pulley in a *clockwise* direction.
4. Position the end of the rope in the drive pulley so the starter grip end is located within the notch in the drive pulley.

**WARNING**

*This step requires an assistant as it is very dangerous, and almost impossible, to try to install the spring by yourself. Both of you must wear eye and hand protection as the recoil spring could jump out at any time—**protect yourself accordingly.***

5. Install the recoil spring into the housing as follows:
  - a. Have the assistant hold onto the housing so it will not rotate.
  - b. Hook the end of the spring (A, Figure 43) onto the outer hook in the housing (B, Figure 43).
  - c. Hold the end of the spring in place and start feeding the spring into the housing in a clockwise direction.
  - d. As you feed the spring into the housing, have the assistant hold the spring down after each loop is installed. The spring must be continually held in place or it will jump out.
  - e. Continue to feed the spring in and hold it down until the entire spring is installed.
  - f. After the spring is completely installed, do not move the housing and spring assembly, as at this point the spring is under a lot of pressure and could jump out at any time. *Protect yourself and your assistant accordingly.*
6. Install the drive pulley into the housing and spring assembly while rotating it in a *clockwise* direction. Make sure the rope is positioned up through the notch in the drive pulley. The tab (A, Figure 44) on the bottom of the drive pulley must engage with the hook (B, Figure 44) in the end of the recoil spring. If they engage, proceed to Step 9. If the two parts will not engage, *carefully* remove the drive pulley as the spring could jump out at this point. Use the procedure in Step 7 and Step 8.
7. Make a *soft* wire hook (do not use stiff wire) and hook it onto the inner end of the recoil spring as shown in Figure 45. The other end of the hook must lay flat on top of the spring coils to allow the drive pulley to drop into position. The wire must be long enough so it can be pulled on.
8. Reinstall the drive pulley into the housing while rotating it in a *clockwise* direction. Make sure the rope is positioned up through the notch in the drive pulley. When the drive pulley comes into contact with the recoil spring, pull sideways on the



hook to bring the inner end of the recoil spring away from the shaft in the housing. Continue to rotate the drive pulley and push it the rest of the way down until it seats and engages with the spring hook. Hold the drive pulley down and pull the soft wire hook out from between the drive pulley and the spring.

9. Make sure the end of the rope in the drive pulley is located within the notch in the drive pulley.

10. To pre-load the recoil spring, rotate the drive pulley *clockwise* 2 complete turns.

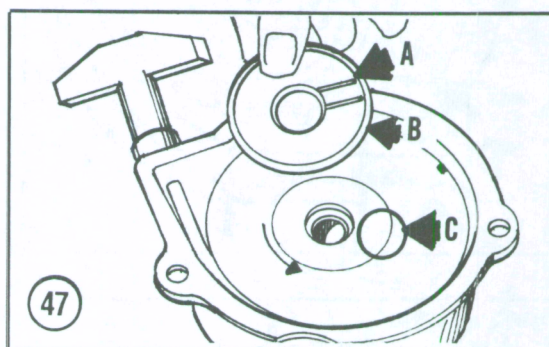
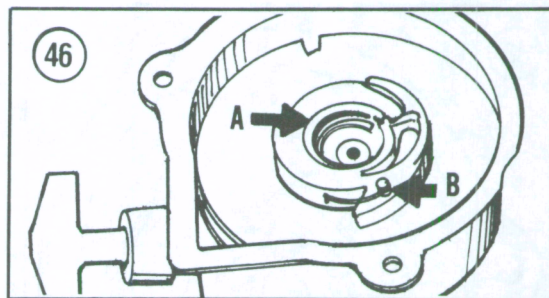
11. Have the assistant hold the drive pulley in this position and feed the free end of the starter rope through the opening in the housing. Attach a pair of Vise Grips to the rope where it exits the housing.

12. Install the rope through the starter handle and move the handle all the way down until it touches the Vise Grips. If a stock Honda nylon rope is used, tie the end using the same special knot as shown in **Figure 42**. Apply heat to the knot (a match is usually sufficient) and *slightly* melt the nylon rope. This will hold the knot securely. Install the handle cover.

13. Apply a light coat of multipurpose grease to the ratchet and install the ratchet (A, **Figure 46**).

14. Install the return spring (B, **Figure 46**) onto the ratchet and drive pulley.

15. Install the spring, spring housing and ratchet guide.



16. Install the friction spring (A, **Figure 47**) onto the friction plate (B, **Figure 47**).

17. Align the friction spring with the raised hook (C, **Figure 47**) on the ratchet. These two parts must align correctly or the recoil starter will not function properly.

18. Install the bolt, (B, **Figure 41**) and tighten to 8-12 N•m (6-9 ft.-lb.).

19. After assembly is complete, check the operation of the recoil starter by pulling on the starter handle. Make sure the drive pulley rotates freely and returns completely. Also make sure the ratchet moves out and in correctly. If either does not operate correctly, disassemble and correct the problem.

20. Inspect the slots in the starter driven pulley. If they are damaged it should be replaced.

**Table 6 ENGINE MOUNTING BOLT TORQUE SPECIFICATIONS**

Item	N•m	ft.-lb.
<b>Fourtrax 70</b>		
Engine hanger bolts and nuts	24-30	17-22
<b>TRX125 and Fourtrax 125</b>		
Engine hanger bolts and nuts		
Front	24-30	17-22
Rear	50-60	36-43
Engine mount pipe bolts		
8 mm	30-40	22-29
10 mm	40-48	29-35

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